

## OIB - P-3 Orion 04/21/17 Science Report

**Aircraft:**

[P-3 Orion](#) ([See full schedule](#))

**Date:**

Friday, April 21, 2017

**Mission:**

OIB

**Mission Location:**

Kangerlussuaq, Greenland

**Mission Summary:**

Mission: Southeast Coastal (priority: baseline)

This mission reflies a 20-km coast-parallel grid along the southeast Greenland coast, enabling direct measurement of  $dh/dt$  in the catchment areas of the many major glaciers in the area across a range of surface elevations. It also reflies the centerline of the Fridtjof Nansen Glacier, as well as the two central branches of the Ikertivaq Glacier. This flight retains a baseline priority for 2017 because it continues an intra annual time series with the spring and fall 2015 and 2016 campaigns along these lines.

The semi-permanent Greenland High pressure system was firmly in control over central Greenland and Summit today, but westerly winds prevailed across the southern portion of the ice cap. This produced widespread cloudiness from orographic uplift over the western flank of Greenland from Disko Bay all the way to Cape Farewell in the far south. These same winds produced moderate downsloping (and thus drying) flow in the southeast. We knew this could cause some light to occasionally moderate chop for this particular mission, which it indeed did on the lower lines. This did not present a problem other than confining us to our seats at times today. And as it turns out, the western clouds were all either high enough to fly under or thin enough for our optical instruments to see through. We obtained very nearly 100% successful data collection.

All instruments performed well. The only exception was the ATM T5 narrow-scan transceiver, which got knocked out of optical alignment during a period of moderate turbulence on the outboard-most line in the southeast. The operators could not realign the optics for several minutes since they could not safely leave their seats until we flew out of the worst of the turbulence. We do not regard this small data loss as significant because the narrow-scan ATM data is rarely used for low-altitude land ice missions such as this one.

**Data volumes:**

Accumulation Radar: 1.4 Gb

ATM: 160 Gb

CAMBOT: 51 Gb

DMS: 106 Gb

FLIR: 16 Gb

KT19: 12 Mb

MCoRDS: 1.9 Tb

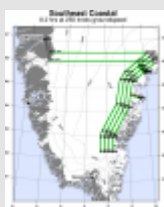
Narrow Swath ATM: 29 Gb

Snow Radar: 1.4 Tb

total data collection time: 7.7 hrs

**Images:**

### Map of Southeast Coastal



Map of today's flight.

[Read more](#)

## Eddy in front of Fridtjof Nansen Glacier



The terminus of Fridtjof Nansen Glacier, with glacier and sea ice debris in its embayment highlighting a striking eddy in the water. The eddy may be caused by today's offshore wind being funneled toward the glacier's lowest point near left center.

[Read more](#)

## Dye-2 and Raven Camp



he Cold War-relic DYE-2 radar station, with Raven Camp in the foreground. Raven is the ski-landing training site for the 109th New York Air National Guard Skier LC-130s, the one-of-its-kind military unit in the world.

[Read more](#)

**Submitted by:**

John Sonntag on 04/21/17

**Source URL:** [https://airbornescience.nasa.gov/science\\_reports/OIB\\_-\\_P-3\\_Orion\\_04\\_21\\_17\\_Science\\_Report?destination=node/49346](https://airbornescience.nasa.gov/science_reports/OIB_-_P-3_Orion_04_21_17_Science_Report?destination=node/49346)